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EXAMINER	
SPAHN, GAY	
ART UNIT	**PAPER NUMBER**
3673	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/722,188	WALDMAN ET AL.	
	Examiner	Art Unit	
	Gay Ann Spahn	3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2005 and 20 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12-33 and 35-37* is/are pending in the application.

4a) Of the above claim(s) *14-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12,13,17-33 and 35-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 November 2003* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions - Election of Species Requirement

Applicants' election without traverse of the species of Figs. 7-8 in the reply filed on 20 June 2005 is acknowledged.

The examiner notes that Applicants stated that claims 1-10, 12-23, and 35-37 all read on the species of Figs. 7-8. However, claims 14-16 clearly do not read on the species of Figs. 7-8.

More particularly, claim 14 recites "a vortex plate" (31) which is shown in Figs. 1-6 and 9-11, but not in Figs. 7-8. On page 5, lines 8-9, the specification states, as follows:

> The outlet 16 shown in Figs. 7 and 8 is a pipe that extends into the riser 12. It does not utilize an elbow or a vortex plate. (Emphasis added).

Claim 15 recites "a catch basin" (80) which is shown in Fig. 11, but not any of Figs. 1-10. Claim 16 recites "a removable grate structure" (82) which is shown in Fig. 11, but not in any of Figs. 1-10.

Further, on page 7, lines 27-30, the specification states, as follows:

> In the embodiments shown in Figs. 1-10, the top opening 28 of the container 12 is closed with a cap 46 that is positioned at or near ground level GL. The cap 46 may be removed in order to clean the riser 12 of any sediments that sink to the bottom or debris that floats on the base liquid.

On page 11, lines 7-16, the specification states, as follows:

> Fig. 11 shows an alternate embodiment of the invention in the form of a catch basin 80. The catch basin 80 has an open top that is covered by a grate 82. Liquid enters the catch basin 80 through the open top 28 and the grate is utilized to block large debris from entering the catch basin

> 80. The catch basin 80 shown utilizes the valve 20 of Figs. 1-3, but, alternatively, may use the valve 20 of Figs. 4-6 or 7-8.
>
> Operation of the catch basin 80 is similar to the prior embodiments, except that the catch basin 80 utilizes the open top end 28 as the inlet 14. Liquid flows into the catch basin 80 through the inlet 14. Once the liquid level, and hence the float 18, within the basin 80 raises past the preselected height H, the valve 20 will open and allow liquid to exit through the outlet 16.

Referring to the above-quoted passages from the specification, it is clear that claims 14-16 do not read on the species of Figs. 7-8.

Therefore, claims 14-16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species of the invention (i.e., claim 14 is drawn to the species of Figs. 1-6 and 9-11 and claims 15 and 16 are drawn to the Fig. 11 species), there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 20 June 2005.

Claim 14 will be rejoined if and when an independent claim on which claim 14 depends and which is generic to the species of Figs. 1-3, 9, and 10, the species of Figs. 4-6, and the species of Figs. 7-8 is found allowable. However, Applicants having stated that no independent claim is generic to the species of Fig. 11, claims 15 and 16 will not be rejoined.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character not mentioned in the description: Figures 7 and 8 show reference character "F" which the examiner presumes is for fluid or fluid level, but reference character "F" is not discussed in the specification. The

examiner suggests changing reference character "F" in Figs. 7 and 8 to reference character "L" since page 9, lines 1-3 states that "[b]efore the liquid L reaches the level of the float 18, the valve 20 is in a closed position so that the liquid L may not exit the riser 12, as shown in Fig. 8" and reference character "L" is not shown in Fig. 8.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the mechanical hinge (claim 9, line 4) must be shown or the features canceled from the claims. The examiner notes that a mechanical hinge is discussed in the specification on page 8, line 2 (with respect to the embodiment shown in Figs. 1-3) and on page 10, line 20 (with respect to the embodiment shown in Figs. 7-8), but no reference numeral is given for the mechanical hinge and therefore, although the mechanical hinge may be shown in the

drawing figures, it has not been labeled as such and cannot be easily identified. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 8, the recitation in lines 2-3 of "said flexible or rigid member including a cord, a string, a bar, and a chain" is an improper Markush grouping because it is does not make clear that either the flexible member or the rigid member is only one structure which can be chosen from a closed-ended or finite group of structures and further it is also improper because a flexible member cannot be a bar and a rigid member cannot be a cord, a string or a chain. Therefore, the examiner suggests rewording the phrase as follows: --wherein if the linkage is the flexible member, the flexible member is chosen from a group consisting of a cord, a string, and a chain, and wherein if the linkage is the rigid member, the rigid member is a bar--.

Additionally, claim 8 is confusing because the recitation of "said bar including a plurality of adjustment holes positioned at spaced locations along the length of the bar" has no meaning if the linkage is the flexible member chosen from the group consisting of a cord, a string, and a chain.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 9, 10, 18, 20-26, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Schafer et al. (U.S. Patent No. 4,621,945)

As to claim 1, Schafer et al. disclose a device for the selective control of a liquid flow from an external body of liquid or liquid and solid separation comprising:

a container (12, 16, 24a-c) having an inlet (14) for the intake of a liquid into the container from an external body of liquid, an outlet (14) for the discharge of the liquid from the container (12, 16, 24a-c), and a closed bottom surface (16);

a float (42) buoyantly positioned within the container (12, 16, 24a-c) and configured to rise and fall in response to the level of liquid (26) within the container (12, 16, 24a-c); and

a valve (18) positioned inside the container (12, 16, 24a-c) in association with the outlet (14), said valve coupled (by cord 44 and bracket 46) to the float (42) such that the valve (18) opens when the float (42) rises above a preselected height within the container (12, 16, 24a-c) and the valve closes when the float (42) falls to the preselected height within the container (12, 16, 24a-c), wherein the distance between the float (42) and the valve (18) when the float (42) is positioned at the preselected height determines a height of liquid required to open the valve (18), wherein valve (18) is oriented at an angle that ranges from an angle greater than zero to about a 60° angle relative to horizontal.

The examiner notes that the valve (18) of Schafer et al. consists of several parts including the metering plate (30) and the flap (32). As shown in Fig. 3, the flap is oriented to be at an angle of approximately 45° to the horizontal which is in the range of between greater than 0° and 60° from the horizontal. Since the claim language does not specify that it is an end of the outlet to which the flap is attached that is at an angle

with respect to the horizontal, the language of the present claim is deemed to be met by Schafer et al.

As to claim 4, Schafer et al. discloses the device of claim 1 as discussed above, and Schafer et al. further discloses the container is a riser (riser pipe 12) and the valve (18) is a flapper valve.

As to claim 9, Schafer et al. discloses the device of claim 4 as discussed above, and Schafer et al. further discloses the flapper valve (18) includes a hinge (the end of flap 32 adjacent bracket 38) at one end and is coupled to the float at the other end (at bracket 46) such that the flapper valve (18) opens around the hinge when the float (42) rises above the preselected height, with the hinge being one of a living hinge or a mechanical hinge.

As to claim 10, Schafer et al. discloses the device of claim 4 as discussed above, and Schafer et al. further disclose that the flapper valve (18) is oriented in a recumbent position within the riser (12).

The examiner notes that Webster's II New College Dictionary (published by Houghton Mifflin Company, Boston, Massachusetts, copyright 1995) defines the word "recumbent" as lying down, resting, reclining or idle. "Recumbent" does not necessarily mean inclined and therefore, the flapper valve (18) of Schafer et al. is deemed to meet the claim language of "recumbent."

As to claim 18, Schafer et al. disclose the device of claim 1 as discussed above, and Schafer et al. further disclose that the container, inlet, and outlet are comprised of one of plastic, concrete, fiberglass, or metal (see Fig. 3, cross-sectional cross-hatching

for container (12, 16, 24a-c) shows material is synthetic resin or plastic and col. 2, lines 22-24 states that "riser pipe 12 (FIGS. 1-3) is formed from a section of drainage tile, normally PVC, polyethylene pipe or clay tile).

As to claim 20, Schafer et al. disclose the device of claim 1 as discussed above, and the metering plate (30) of Schafer et al. would clearly act to strain out solids from liquids in the container so that the claim language of "the container and the valve are together configured to separate solids from liquids within the container" is met.

As to claim 21, Schafer et al. disclose the device of claim 1 as discussed above, and the metering plate (30) of Schafer et al. would clearly act to strain out solids from liquids in the container so that the claim language of "the container and valve are together configured to separate liquids and solids within the container from a base liquid, with liquids and solids having a greater density than a density of the base liquid sinking to the bottom surface of the container and liquids and solids having a lesser density than the density of the base liquid floating on top of the base liquid" is met.

As to claim 22, Schafer et al. discloses a flow control device comprising:

a riser (12) having an inlet (14) for the intake of a fluid, an outlet (14) for the exit of a fluid, and a closed bottom surface (16);

a float (42) positioned inside the riser (12) and configured to travel in response to a fluid level (26) in the riser (12); and

a valve (18) positioned inside the riser (12) coupled (via cord (44) and bracket (46)) to the float (42), said valve (18) being movably responsive to the travel of the float

(42), wherein the valve (18) is coupled to the outlet (14) and is oriented at an angle ranging from greater than zero to about 60 degrees relative to horizontal.

The examiner notes that the valve (18) of Schafer et al. consists of several parts including the metering plate (30) and the flap (32). As shown in Fig. 3 the flap is oriented to be at an angle of approximately 45° to the horizontal which is in the range of between greater than 0° and 60° from the horizontal. Since the claim language does not specify that it is an end of the outlet to which the flap is attached that is at an angle with respect to the horizontal, the language of the present claim is deemed to be met by Schafer et al.

As to claim 23, Schafer et al. disclose the device of claim 22 as discussed above, and Schafer et al. further disclose that the angle is about 45° relative to horizontal.

As to claim 24, Schafer et al. disclose the device of claim 22 as discussed above, and Schafer et al. further disclose a linkage (cord (44) and bracket (46)) positioned between the float (42) and the valve (18); and

a linkage latching mechanism (tying the cord (44) to the bracket (46) at different positions along the length of the cord (44) to change the free length of the cord and thus the height of the float (42)) for fixing the length of the linkage (cord (44) and bracket (46)) between the float (42) and the valve (18).

As to claim 25, Schafer et al. disclose the device of claim 24 as discussed above, and Schafer et al. further discloses a means for raising the float height (tying the cord (44) to the bracket (46) at different positions along the length of the cord (44) to change the free length of the cord and thus the height of the float (42)).

As to claim 26, Schafer et al. disclose a method for controlling liquid flow from an external body of liquid comprising:

providing a container (12, 16, 24a-c) having an inlet (14) and an outlet (14) within the container (12, 16, 24a-c);

disposing a valve (18) between the inlet (14) and the outlet (14) within the container (12, 16, 24a-c) wherein the valve (18) is oriented at an angle that ranges from an angle greater than zero to about a 60° angle relative to horizontal;

coupling (via cord (44) and bracket (46)) a float (42) to the valve (18), said float (42) being buoyantly responsive to liquid that enters the container (12, 16, 24a-c) such that the valve (18) opens when the float (42) rises above a preselected height within the container (12, 16, 24a-c) and the valve (18) closes when the float (42) sinks to the preselected height within the container (12, 16, 24a-c), wherein the distance between the float (42) and the valve (18) when the float (42) is positioned at the preselected height determines a height of liquid required to open the valve.

The examiner notes that the valve (18) of Schafer et al. consists of several parts including the metering plate (30) and the flap (32). As shown in Fig. 3 the flap is oriented to be at an angle of approximately 45° to the horizontal which is in the range of between greater than 0° and 60° from the horizontal. Since the claim language does not specify that it is an end of the outlet to which the flap is attached that is at an angle with respect to the horizontal, the language of the present claim is deemed to be met by Schafer et al.

As to claim 30, Schafer et al. disclose a device for the selective control of a liquid flow from an external body of liquid or liquid and solid separation comprising:

a container (12, 16, 24a-c) having an inlet (14) for the intake of a liquid into the container (12, 16, 24a-c) from an external body of liquid, an outlet (14) for the discharge of the liquid from the container (12, 16, 24a-c), and a closed bottom surface (16);

a valve (18) positioned inside the container (12, 16, 24a-c) in association with the outlet (14) and configured to be opened and closed, wherein the valve (18) is oriented at an angle that ranges from an angle greater than zero to about a 60° angle relative to horizontal.

The examiner notes that the valve (18) of Schafer et al. consists of several parts including the metering plate (30) and the flap (32). As shown in Fig. 3 the flap is oriented to be at an angle of approximately 45° to the horizontal which is in the range of between greater than 0° and 60° from the horizontal. Since the claim language does not specify that it is an end of the outlet to which the flap is attached that is at an angle with respect to the horizontal, the language of the present claim is deemed to be met by Schafer et al.

Claims 1, 2, 18, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Carson (U.S. Patent No. 2,292,509).

As to claim 1, Carson disclose a device for the selective control of a liquid flow from an external body of liquid or liquid and solid separation comprising:

a container (6) having an inlet (1) for the intake of a liquid into the container (6) from an external body of liquid, an outlet (16) for the discharge of the liquid from the container (6), and a closed bottom surface;

a float (30) buoyantly positioned within the container (6) and configured to rise and fall in response to the level of liquid (X) within the container (6); and

a valve (18) positioned inside the container (6) in association with the outlet (16), said valve (18) coupled (through linkages including 20, 21, 25, 26, 27, and L - see Figs. 6-7 and page 1, second column, line 12 through page 2, column 1, line 23) to the float (30) such that the valve (18) opens when the float (30) rises above a preselected height within the container (6) and the valve (18) closes when the float (30) falls to the preselected height within the container (6), wherein the distance between the float (30) and the valve (18) when the float (30) is positioned at the preselected height determines a height of liquid required to open the valve (18), wherein valve (18) is oriented at an angle that ranges from an angle greater than zero to about a 60° angle relative to horizontal.

The examiner notes that in any of Figs. 3, 4, and 5, the valve (18) of Carson appears to be oriented at an angle to the horizontal which is in the range of between greater than 0° and 60° and thus, the language of the present claim is deemed to be met by Carson.

As to claim 2, Carson discloses the device of claim 1 as discussed above, and Carson further discloses that the inlet (1) comprises an inlet pipe (1) and the outlet (16) comprises an outlet pipe (16), with the inlet and outlet pipes being positioned in the

same plane (i.e., either the plane of the paper or any plane through the centerlines of inlet pipe (1) and outlet pipe (16)); and the valve (18) is positioned at a height that is spaced from the closed bottom surface of the container (6).

As to claim 18, Carson discloses the device of claim 1 as discussed above, and Carson further discloses that the container, inlet, and outlet are comprised of one of plastic, concrete, fiberglass, or metal (see Figs. 3-6 all shown cross-sectional cross-hatching for container (6), inlet (1), and outlet (16) being metal).

As to claim 20, Carson discloses the device of claim 1 as discussed above, and solids carried into the container (6) through the inlet (1) of Carson would clearly fall to the bottom of the container (6) and not be carried out with the liquid through the outlet (16) of the container (6) so that the claim language of "the container and the valve are together configured to separate solids from liquids within the container" is met.

As to claim 21, Carson discloses the device of claim 1 as discussed above, and solids carried into the container (6) through the inlet (1) of Carson would clearly fall to the bottom of the container (6) and not be carried out with the liquid through the outlet (16) of the container (6) so that the claim language of "the container and valve are together configured to separate liquids and solids within the container from a base liquid, with liquids and solids having a greater density than a density of the base liquid sinking to the bottom surface of the container and liquids and solids having a lesser density than the density of the base liquid floating on top of the base liquid" is met.

As to claim 30, Carson discloses a device for the selective control of a liquid flow from an external body of liquid or liquid and solid separation comprising:

a container (6) having an inlet (1) for the intake of a liquid into the container (6) from an external body of liquid, an outlet (16) for the discharge of the liquid from the container (6), and a closed bottom surface;

a valve (18) positioned inside the container (6) in association with the outlet (146 and configured to be opened and closed, wherein the valve (18) is oriented at an angle that ranges from an angle greater than zero to about a 60° angle relative to horizontal.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 10-12, 27-29, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schafer et al. (U.S. Patent No. 4,621,945) in view of Carson (U.S. Patent No. 2,292,509).

As to claim 2, Schafer et al. discloses the device of claim 1 as discussed above, and Schafer et al. further disclose that the inlet (24a) comprises an inlet pipe (24a) and the outlet (24b) comprises an outlet pipe (24b), with the inlet and outlet pipes (24a, 24b) being positioned in the same plane (i.e., either the plane of the paper or any plane through the centerlines of both inlet and outlet pipes (24a, 24b).

However, Schafer et al. fail to disclose that the valve (18) is positioned at a height that is spaced from the closed bottom surface of the container (12, 14, 16, 24a-c).

Carson discloses a valve (18) that is positioned at a height that is spaced from the closed bottom surface of the container (6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Schafer et al. to place the valve at a height spaced apart from the closed bottom surface of the container as taught by Carson in order to sift out solid materials from liquids (i.e., allow solids to be able to settled to the bottom of the container while still allowing the liquid to exit the container through the outlet).

As to claim 10, Schafer et al. discloses the device of claim 4 as discussed above. The examiner notes that with respect to the 35 U.S.C. § 102(b) rejection of claim 10 above, she has taken the position that Schafer et al. meets the "recumbent" claim language. However, if "recumbent" can and does mean "inclined", then Schafer et al. fail to explicitly disclose that the flapper valve is oriented in a recumbent position within the riser.

Carson discloses to place a valve (18) is a recumbent position.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Schafer et al. by placing the valve (18) in a recumbent position as taught by Carson in order to have less of an angle through which to rotate the flap to open the valve.

As to claim 12, Schafer et al. in view of Carson discloses the device of claim 10 as discussed above, and Carson further discloses the recumbent position is about 45° relative to the horizontal.

As to claim 13, Schafer et al. in view of Carson discloses the device of claim 10 as discussed above, and Schafer et al. further disclose that the liquid flows into the outlet in a direction that is substantially perpendicular to a movement direction of the flapper valve.

As to claim 27, Schafer et al. disclose a metering plate (30) which is capable of performing a method for separating solids received from an external body of liquid that includes solids and liquids comprising: the method of claim 26 as discussed above and that when the valve (18) is opened, liquids exit into the outlet (14).

But Schafer et al. fail to disclose the step of positioning a height of the valve such that at least some of the solids sink to a position below the height of the valve.

Carson discloses the step of positioning a height of the valve (18) such that at least some of solids would sink to a position (bottom of box (6)) below the height of the valve (18), wherein when the valve (18) is opened, liquids exit into the outlet (16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Schafer et al. to include the step of positioning the valve at some predetermined height above the bottom floor of the container as taught by Carson in order to aid Schafer et al.'s metering plate (30) to better strain out solids from liquids.

As to claim 28, Schafer et al. disclose a metering plate (30) which is capable of performing a method of separating liquids having a first density and a second density that are disposed together in a liquid received from an external body of liquid comprising: the method of claim 26 as discussed above and that liquid exits through the valve (18) when the valve (18) is opened.

Schafer et al. fail to disclose the step of positioning the height of the valve such that liquids having a first density sink to a level within the container that is below the valve and liquids having a second density rise to a level that allows them to exit into the outlet through the valve when the valve is opened.

Carson discloses the step of positioning the height of the valve (18) above the bottom floor of the container (6) such that liquids having a first density (liquids with much entrained solids) sink to a level within the container that is below the valve and liquids having a second density (liquids with little to no entrained solids) rise to a level that allows them to exit into the outlet (16) through the valve (18) when the valve is opened (18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Schafer et al. to include the step of positioning the valve at some predetermined height above the bottom floor of the container as taught by Carson in order to aid Schafer et al.'s metering plate (30) to better strain out solids from liquids.

Further, it is well know that liquids with little to no entrained solids are less dense than liquids with many entrained solids and thus it would be obvious that less dense

liquids would not sink to the floor of a structure so as to be capable of passing through a valve situated at a level above the bottom surface of the container (where solids and liquids with much entrained matter would sink).

As to claim 29, Schafer et al. in view of Carson discloses the method of claim 27 as discussed above, and Carson further discloses that the liquid received from an external body of liquid further comprises a liquid having a third density, and further comprising positioning the height of the valve (18) above the bottom surface of the container (6) such that the liquid having a third density rises to a level above the valve such that when the valve is opened, the liquid having a second density exits the container while the liquids having a first and third density remain in the container.

As to claim 35, Schafer et al. discloses a valve assembly (18) for positioning inside a container (12, 16, 24a-c) having an inlet (14) and an outlet (14) for controlling a flow of a liquid from the inlet (14) to the outlet (14) comprising:

a valve seat (28) defining an opening through which a liquid may exit a container (12, 16, 24a-c); and

a flapper valve (18) coupled to the valve seat (28).

However, Schafer et al. fail to explicitly disclose that the valve seat (28) is positioned at an angle relative to a horizontal reference that ranges from greater than zero to about 60 degrees.

Carson discloses a valve (18) having a valve seat (17) that is positioned at an angle relative to a horizontal reference that ranges from greater than zero to about 60 degrees.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Schafer et al. to orient the valve seat at an angle from the horizontal with ranges from zero to 60° as taught by Carson in order to have to rotate the flap of the flapper valve through less of an angle to raise it to its maximum open position.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schafer et al. (U.S. Patent No. 4,621,945) in view of Carson (U.S. Patent No. 2,292,509), as applied to claim 35 above, and further in view of Proulx (U.S. Patent No. 5,020,567).

As to claim 36, Schafer et al. in view of Carson discloses the valve assembly of claim 35 as discussed above, and Schafer et al. in view of Carson further discloses that the flapper valve (18) comprises a rigid plate (30) and a valve seat (28).

However, Schafer et al. in view of Carson fails to explicitly disclose that the rigid plate is rotationally coupled to the valve seat, and a flexible seal coupled to the rigid plate, said flexible seal configured to mate with the valve seat to close the opening.

Proulx (see Figs. 2-5) discloses a flapper valve (1) comprised of a rigid plate (5) rotationally coupled to the valve seat (6), and a flexible seal (27) coupled to the rigid plate (5), said flexible seal (27) configured to mate with the valve seat (6) to close the opening.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Schafer et al. in view of Carson to have a rotationally hinged rigid plate with an attached sealing member as taught by Proulx in

order to provide for better drainage by improving the lack of imperviousness between the plate and flap and to prevent liquid leakage when the valve is seated on the valve seat.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schafer et al. (U.S. Patent No. 4,621,945) in view of Proulx (U.S. Patent No. 5,020,567).

As to claim 5, Schafer et al. discloses the device of claim 4 as discussed above, but Schafer et al. fail to explicitly disclose that the flapper valve comprises a rigid plate adjoined to a flexible seal.

Proulx (see Figs. 2-5) discloses that the flapper valve (1) comprises a rigid plate (5) adjoined to a flexible seal (27), with the rigid plate (5) being coupled (via cord (25), bracket member 23, and flap 8) to the float.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Schafer et al. to have a flapper valve with a rigid plate having an attached sealing member as taught by Proulx in order to provide for better drainage by improving the lack of imperviousness between the plate and flap and to prevent liquid leakage when the valve is seated on the valve seat.

Claims 3, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schafer et al. (U.S. Patent No. 4,621,945) in view of Clark (U.S. Patent No. 5,348,041).

As to claim 3, Schafer et al. disclose the device of claim 1 as discussed above, and Schafer et al. further disclose that the inlet (24a) has a dimension and the outlet (24b) has a dimension, but Schafer et al. fail to explicitly disclose that the inlet (24a) dimension is smaller than the outlet (24b) dimension.

Clark discloses that an inlet (100) dimension is smaller than an outlet (5) dimension.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Schafer et al. to have an inlet dimension smaller than an outlet dimension as taught by Clark in order to let a greater volume of water escape through the larger dimensioned outlet then is being fed into the system through the smaller dimensioned inlet.

As to claim 32, Schafer et al. disclose a device for the selective control of a liquid flow from an external body of liquid or liquid and solid separation comprising:

a container (12, 16, 24a-c) having an inlet (14) with a first dimension for the intake of a liquid into the container (12, 16, 24a-c) from an external body of liquid, an outlet (14) with a second dimension for the discharge of a liquid from the container (12, 16, 24a-c), and a closed bottom surface (16); and

a float (42) buoyantly positioned within the container (12, 16, 24a-c) and configured to rise and fall in response to the level of liquid (26) within the container (12, 16, 24a-c); and

a flapper valve (18) positioned in the container in association with the outlet (14), said flapper valve (18) coupled (via cord (44) and bracket (46)) to the float (42) such

that the flapper valve (18) opens when the float (42) rises above a preselected height within the container (12, 16, 24a-c) and the flapper valve (18) closes when the float (42) falls to the preselected height within the container (12, 16, 24a-c).

Schafer et al. fail to explicitly disclose that the inlet (14) dimension being smaller than the outlet dimension (14).

Clark discloses that an inlet (100) dimension is smaller than an outlet (5) dimension.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Schafer et al. to have an inlet dimension smaller than an outlet dimension as taught by Clark in order to let a greater volume of water escape through the larger dimensioned outlet then is being fed into the system through the smaller dimensioned inlet.

As to claim 33, Schafer et al. in view of Clark discloses the device of claim 32 as discussed above, and Schafer et al. further disclose that the flapper valve (18) comprises a rigid plate (30) adjoined to a flexible seal (32).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carson (U.S. Patent No. 2,292,509) in view of Clark (U.S. Patent No. 5,348,041).

As to claim 3, Carson discloses the device of claim 1 as discussed above, and Carson further discloses that the inlet (1) has a dimension and the outlet (16) has a dimension, but Carson fails to explicitly disclose that the inlet (1) dimension is smaller than the outlet (16) dimension.

Clark discloses an inlet (100) dimension is smaller than an outlet (5) dimension.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Carson to have an inlet dimension smaller than an outlet dimension as taught by Clark in order to let a greater volume of water escape through the larger dimensioned outlet then is being fed into the system through the smaller dimensioned inlet.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schafer et al. (U.S. Patent No. 4,621,945) in view of Murphy, Jr. et al. (U.S. Patent No. 5,493,086).

As to claim 6, Schafer et al. disclose the device of claim 1 as discussed above, but Schafer et al. fail to disclose that the float comprises a closed-cell foam enclosed in a plastic outer shell.

Murphy, Jr. et al. disclose a float (31) comprised of a closed-cell foam enclosed in a plastic outer shell (see col. 12, lines 22-23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Schafer et al. to include a float made of closed-cell foam enclosed in a plastic outer shell as taught by Murphy, Jr. et al. in order to be able to use any liquid in the device (i.e., the closed cell foam material would be protected against a caustic liquid by the outer plastic coating) and not just water.

As to claim 7, Schafer et al. in view of Murphy, Jr. et al. discloses the device of claim 6 as discussed above, and Schafer et al. further disclose a linkage (cord 44) is

positioned between the float (42) and the valve (18) and the linkage (44) is adjustable in length (via tying the cord 44 on bracket 46 so that there is more or less length of cord 44 between the bracket 46 and the float (42)).

As to claim 8, Schafer et al. in view of Murphy, Jr. et al. discloses the device of claim 7 as discussed above, and Schafer et al. further disclose that the linkage (cord 44 and bracket 46) between the float (42) and the valve (18) is at least one of a flexible member (cord 44) and a rigid member (bracket 46), said flexible or rigid member (either cord 44 or bracket 46) including a cord, a string, a bar, and a chain, said bar including a plurality of adjustment holes positioned at spaced locations along the length of the bar.

The examiner notes that since the linkage is a flexible member (cord 18), the claim language is met and the recitation of "said bar including a plurality of adjustment holes positioned at spaced locations along the length of the bar" has no meaning and need not be satisfied for the claim to be fully met.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carson (U.S. Patent No. 2,292,509) in view of Murphy, Jr. et al. (U.S. Patent No. 5,493,086).

As to claim 6, Carson discloses the device of claim 1 as discussed above, but Carson fails to disclose that the float comprises a closed-cell foam enclosed in a plastic outer shell.

Murphy, Jr. et al. disclose a float (31) comprised of a closed-cell foam enclosed in a plastic outer shell (see col. 12, lines 22-23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Carson to include a float made of closed-cell foam enclosed in a plastic outer shell as taught by Murphy, Jr. et al. in order to be able to use any liquid in the device (i.e., the closed cell foam material would be protected against a caustic liquid by the outer plastic coating) and not just water.

As to claim 7, Carson in view of Murphy, Jr. et al. discloses the device of claim 6 as discussed above, and Murphy, Jr. et al. further disclose that a linkage (31a, 32) is positioned between the float (31) and the valve and the linkage (31a, 32) is adjustable in length (via threaded portion (31a)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Carson by placing the length adjustment means 31a of Murphy, Jr. et al. between the float (30) and lever 25 of Carson (see Fig. 6 of Carson) in order to be able to adjust the length of the linkage between the float and the valve so as to require more or less height of liquid in the container for opening/closing of the valve.

As to claim 8, Carson in view of Murphy, Jr. et al. discloses the device of claim 7 as discussed above, and Carson further discloses the linkage between the float and the valve is at least one of a flexible member and a rigid member (linkage is comprised of rigid members 20, 21, 25, 26, etc.), said flexible or rigid member including a cord, a string, a bar, and a chain (rigid members 20, 21, 25, and 26 are bars), said bar including a plurality of adjustment holes positioned at spaced locations along the length of the bar (holes for studs 23, 32 and bolt 28 are spaced along length of bars).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schafer et al. (U.S. Patent No. 4,621,945).

As to claim 17, Schafer et al. disclose the device of claim 1 as discussed above, but Schafer et al. fail to explicitly disclose that the container, inlet and outlet are molded as one piece.

However, it is well settled "that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice." (See *Schenck v. Norton Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983)). Therefore, that the container, inlet and outlet are molded as one piece would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made since it is well founded that merely making something that is more than one-piece into a one-piece structure by molding is not unobvious.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carson (U.S. Patent No. 2,292,509).

As to claim 17, Carson discloses the device of claim 1 as discussed above, but Carson fails to explicitly disclose that the container, inlet and outlet are molded as one piece.

However, it is well settled "that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice." (See *Schenck v. Norton Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983)).

Therefore, that the container, inlet and outlet are molded as one piece would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made since it is well founded that merely making something that is more than one-piece into a one-piece structure by molding is not unobvious.

Claims 19 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schafer et al. (U.S. Patent No. 4,621,945).

As to claim 19, Schafer et al. disclose the device of claim 1 as discussed above, and Schafer et al. further disclose that container (12, 14, 16, 24a-c) comprises a pipe (12) having a base structure (16, 24a-c) forming the bottom surface and an open top end, and the inlet (14) and outlet (14) both comprise a conduit, each of which is affixed to the pipe (12) of the container, with the open top end of the container being covered by a cap (22).

But Schafer et al. fail to disclose that the container comprises a corrugated pipe, and the inlet and outlet both comprise a conduit each of which is affixed to the corrugated pipe of the container.

However, the examiner takes Official Notice that it is notoriously well known to use corrugated piping in liquid flow control applications and as such, the examiner deems the container comprising corrugated piping having an inlet and outlet affixed thereto to constitute a further obvious expedient to one having ordinary skill in the art at the time the invention was made since it is well founded that merely substituting corrugated piping for non-corrugated pipe is not unobvious.

As to claim 31, Schafer et al. discloses the device of claim 30 as discussed above, but Schafer et al. fail to explicitly disclose a winch coupled to the valve for opening and closing the valve (18).

However, the examiner takes Official Notice that a winch it is notoriously well known to use a winch in combination with a cord or chain to wind up the cord or chain in order to raise a structure. Thus, using a winch to draw up a cord or chain to open a valve would not be unobvious.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schafer et al. (U.S. Patent No. 4,621,945) in view of Suazo et al. (U.S. Patent No. 6,692,186)

As to claim 37, Schafer et al. discloses the device of claim 1 as discussed above, but Schafer et al. fails to disclose that the container is formed as a single piece utilizing rotational molding.

Suazo et al. discloses making apparatus for transporting water formed as one-piece or single piece structures using rotational molding (see col. 8, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Schafer et al. by forming the container as a one-piece or single piece structure through rotational molding as taught by Suazo et al. in order for there to be less chance of leakage of the liquid through the joints of the multi-piece structure.

Response to Arguments

Applicant's arguments with respect to claims 1-10, 12-33, and 35-37 have been considered but are moot in view of the new grounds of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,749,743 to Rohrer et al. discloses a fuel diverter for a recirculating wastewater treatment system. U.S. Patent No. 4,324,506 to Steinke discloses a self-regulating fluid control valve. U.S. Patent No. 3,916,945 to Bennett discloses a float operated valve. U.S. Patent No. 4.810,348 to Taylor discloses a subsurface irrigation and drainage system. U.S. Patent No. 6,446,665 to Coscarella discloses a backwater valve. U.S. Patent Nos. 4,475,571 and Re. 32,870 to Houston, Jr. et al. discloses sewer relief valves. U.S. Patent Nos. 3,797,253, 4,014,361, and 4,497,333 to Rodieck discloses an automatic irrigation system, an automatic anti-siphon valve, and a sequencing valve and irrigation system, respectively. U.S. Patent Nos. 5,213,130 and 5,174,499 to Al-Hamlan disclose irrigation systems. U.S. Patent No. 3,895,402 to Page discloses a remotely located apparatus for maintaining the water level within a swimming pool. U.S. Patent No. 4,498,810 discloses a collapsible rubber dam (see Fig. 48, float 72a). U.S. Patent No. 5,988,201 to Lebkuchner et al. discloses an automatic vent having multi-hinge valve. U.S. Patent No. 5,533,545 to Robinson discloses a drain system. U.S. Patent Application Publication No. 2004/0182760 to Vaughan discloses a float-responsive valve with premature closure prevention. U.S.

Patent No. 3,212,268 to Ortega discloses a surface skimmer. U.S. Patent Nos. 5,161,911, 4,997,312, and 4,892,440 disclose a water backup preventing system and monitoring system therefor. U.S. Patent No. 5,365,970 to Butler discloses a gravity flow chemigation system and low level shutoff valve. U.S. Patent No. 6,467,994 to Ankeny et al. discloses an apparatus and method for beneficial use or handling of runoff or collected water (see Figs. 5A and 5B). U.S. Patent No. 1,612,195 to Kirchhan et al. discloses a trap. U.S. Patent No. 297,643 to Stark discloses a sewer. U.S. Patent No. 6.148,852 to Osterman discloses a sump pit regulating valve. U.S. Patent No. 993,587 to Dodd et al. discloses a regulator valve for sewers. U.S. Patent No. 2,206,363 to Murphy discloses a valve for an oil tank.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gay Ann Spahn whose telephone number is (571)-272-7731. The examiner can normally be reached on Monday through Thursday, 8:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford can be reached on (571)-272-7049. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. (This facsimile number is being phased out and will only be usable until September 15, 2005 and the new facsimile number beginning July 15, 2005 will be (571)-272-8300).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GAS

Gay Ann Spahn, Patent Examiner
June 29, 2005

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